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PATENT APPLICATION

ATTORNEY DOCKET NO. ____200308343-1____

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s):   Suban Krishnamoorthy

Application No.: 09/684,472

Filing Date: 10/06/2000

Confirmation No.: 4021

Examiner: Lee, Phillip C.

Group Art Unit: 4021

Title: Modular, Dynamically Extensible, and Integrated Storage Area Network Management System

Mail Stop Appeal Brief-Patents
Commissioner For Patents
PO Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on December 14, 2005 .

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) $500.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

☐(a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d)) for the total number of months checked below:

☐ 1st Month $120   ☐ 2nd Month $450   ☐ 3rd Month $1020   ☐ 4th Month $1590

☐ The extension fee has already been filed in this application.

☒(b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account 08-2025 the sum of ___$ 500___ . At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees. A duplicate copy of this sheet is enclosed.

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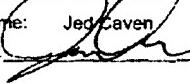Date of Deposit:

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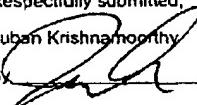Date of facsimile: 02/27/2006
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Respectfully submitted,
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Rev 10/05 (AplBrief)

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	)	
	)	
Suban Krishnamoorthy	)	Group Art Unit: 2154
	)	
Serial No.: 09/684,472	)	Examiner: Lee, Phillip C.
	)	
Filing Date: October 6, 2000	)	Confirmation No.: 4021
	)	

For: Modular, Dynamically Extensible, and Integrated Storage Area Network Management System

APPEAL BRIEF

To: Commissioner for Patents
       P.O. Box 1450
       Alexandria, VA 22313-1450

Sir:

This Appeal Brief is submitted in response to the final rejections of the claims mailed

August 26, 2005. A Notice of Appeal was filed on December 14, 2005.

REAL PARTY IN INTEREST

The assignee of the entire right, title, and interest in the patent application is Hewlett-

Packard Development Company.

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RELATED APPEALS AND INTERFERENCES

There are currently no related appeals of other United States patent applications known to Appellants, Appellants' legal representative, or the assignee that will directly affect, or be directly affected by, or have a bearing on, the Board's decision. There are currently no related interferences known to Appellants, Appellants' legal representative, or the assignee which will directly affect, or be directly affected by, or have a bearing on, the Board's decision.

STATUS OF CLAIMS

Claims 18-35 are pending in the application. In the final Office Action mailed August 26, 2005, independent claim 18 and dependent claims 19-28, 30, and 31 were rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,654,801 to Mann ("Mann"). Claim 29 was rejected under 35 U.S.C. §103(a) as being obvious over Mann in view of U.S. Patent No. 6,654,801 to Singh ("Singh"). Claim 32 was rejected under 35 U.S.C. §103(a) as being obvious over Mann in view of U.S. Patent No. 6,421,723 to Tawil ("Tawil"). Claims 33-35 were rejected under 35 U.S.C. §103(a) as being obvious over Mann in view of U.S. Patent No. 6,212,825 to Chrabaszcz ("Chrabaszcz").

STATUS OF AMENDMENTS

No amendments have been filed subsequent to the final rejection.

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SUMMARY OF CLAIMED SUBJECT MATTER

The subject matter of the independent claims is summarized below with reference numerals and reference to the specification and drawings in accordance with 37 CFR §41.37.

Claim 18

Claim 18 is directed to a system comprising:

an integrated management agent (page 10, line 3; Fig. 2, reference numeral 220) capable of managing components of a storage area network (SAN), the integrated management agent comprising a device agent (page 8, line 14; Fig. 2, reference numeral 207);

the device agent comprising an object-based device handler sublayer (page 8, line 16; Fig. 2, reference numeral 208) and a protocol-dependent device handler sublayer (page 8, line 16; Fig. 2, reference numeral 219), the protocol-dependent device handler sublayer comprising multiple modules (page 8, line 17; Fig. 2, reference numerals 209, 210, 211, 212), each respective module of the multiple modules adapted to support a respective device-type-specific protocol; and

wherein a particular module of the multiple modules that is adapted to support a particular device-type-specific protocol may be installed to or uninstalled from the protocol-dependent device handler sublayer independently of other modules of the multiple modules while the integrated management agent is running.

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GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 18-28, 28, 30 and 31 are obvious under 35 U.S.C. §103(a) in view of

Mann.

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ARGUMENT

I.   Rejections Under 35 U.S.C. §103

Claims 18-28, 30, and 31 were rejected under 35 U.S.C. §103(a) as being obvious

over U.S. Patent No. 6,654,801 to Mann ("Mann"). These rejections are traversed based on

the following arguments.

A.   Claim 18

Claim 18 stands rejected over Mann. Applicants traverse this rejection, and assert

that the final Action fails to establish a *prima facie* case of obviousness.

To establish a *prima facie* case of obviousness the Action must establish that all

limitations recited in the claim are disclosed or suggested by the cited reference. See, MPEP

2143.03. Applicants assert that the Action has failed to establish a *prima facie* case of

obviousness because Mann fails to disclose (or even to suggest) numerous features recited in

the claims.

Claim 18 recites the limitation of "an integrated management agent capable of

managing components of a storage area network (SAN), the integrated management agent

comprising a device agent." The final Action asserts that Mann teaches this limitation, and

now appears to equate the Network Control Console, Point of Presence, and Broker described

in Mann at column 4, lines 40-53 to the integrated management agent recited in claim 18.

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Claim 18 further recites the limitation that "the device agent comprising an object-based device handler sublayer and a protocol-dependent device handler sublayer, the protocol-dependent device handler sublayer comprising multiple modules, each respective module of the multiple modules adapted to support a respective device-type-specific protocol." The Action asserts that Mann teaches this limitation, and cites column 6, lines 13-41 and Fig. 1 to support the rejection. Applicant disagrees. The cited text reads as follows:

> Referring back to FIG. 1 information bus 22 serves to handle communication requests and responses originating from Point of Presence (POP) 26, NOC 16 or other PoPs and/or NOCs within the data communications network 10. The PoP 26 is one of many PoPs with which the information bus 22 is in communication. Located within PoP 26 is a host or node 28. The node 28 is in communication with the information bus 22 through control adapter 30 and one or more service adapters 32 that are connected with the various services that are used on the node 28. PoPs, such as the simplified example shown in FIG. 1, are located throughout the distributed data communications network. PoPs will generally comprise more services than are shown in FIG. 1 and may include more than one node handling network management interface capabilities. It is the task of the network management system of this invention to manage all the services and interfaces housed at the numerous PoPs comprising the comprehensive network.

> By way of example, node 28 of FIG. 1 is configured with protocol gateway service 34, Authentication, Authorization and Accounting (AAA) service 36, Domain Name System (DNS) service 38, Dynamic Host Configuration Protocol (DHCP) service 40 and cache service 42. Node 28 may have single instances of each service running or may have multiple instances of a service running. Additionally, node 28 is not confined to having only one service component of a specific type associated with it, i.e., node 28 can be configured to have two or more AAA services, DNS services, DHCP services . . . etc. in communication with node 28. Those of ordinary skill in the art will appreciate that the services shown are not intended to be limiting and that other services and other service configurations can be used without departing from the inventive concepts herein disclosed. Not all services need to be running at each PoP and a PoP may comprise one or more host computers on which one or more of the services may be running.

Nothing in the cited text discloses or suggests *the device agent comprising an object-based device handler sublayer and a protocol-dependent device handler sublayer, the*

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protocol-dependent device handler sublayer comprising multiple modules, each respective

module of the multiple modules adapted to support a respective device-type-specific protocol,

as recited in claim 18.

In the Examiner's remarks in paragraph 39 of the final Action, the Examiner appears

to assert that Mann discloses installing a new service component, which the Examiner

appears to equate to a protocol-specific module, must be installed to the node handling

network management interface, and cites column 6, lines 31-35, column 10, lines 19-39, and

column 12, lines 13-22 to support the assertion. Applicants disagree, and assert that the

Examiner's position is factually incorrect. As noted above, contrary to the Examiner's

assertion, none of the services described in column 6, lines 31-36 correspond to a *device-type*

specific protocol, as recited in the claim.

Claim 18 further recites the limitation "wherein a particular module of the multiple

modules that is adapted to support a particular device-type-specific protocol may be installed

to or uninstalled from the protocol-dependent device handler sublayer independently of other

modules of the multiple modules while the integrated management agent is running." The

Action asserts that Mann teaches this limitation, and cites column 12, lines 13-47 to support

the rejection. Applicant disagrees. The cited text reads as follows:

> FIG. 6 is a flow chart illustrating a method for seamless integration of a
> new service or node within a data communications network management
> system, in accordance with a presently preferred embodiment of the present
> invention. At 300, a node or service is started manually at a Point of Presence
> within a data communications network. Manually, in this sense, refers to a
> service or node that is started or added at one of the numerous PoPs in the
> distributed data communications network without a command to do so being
> issued from the network management operation center. The service or node
> being started has an associated service or control adapter running and is in
> communication with an information bus. At 310, the newly started node or
> service begins sending out operational status signals over the information bus.
> These signals are published as heartbeat events on to an information bus.
> Heartbeat events are published at a prescribed interval to alert subscribing

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entities that a specific node or service is still functional.

At 320, these signals are received by an unknowing network management control host. The host has no identity information in its database for this new service or node, therefore, at 330, the network management control host sends out signals requesting identification information. These signals are published as discover events by the database adapter. At 340, these identification request signals are received by the new service or node and the associated control adapter or service adapter sends signals with the requested identification information supplied therein. These events are published as identity events in response to received discover events. At 350, the subscribing network management control host receives the identity information and stores such in its database. The new service or node has now been integrated into the data communications network management system and the identifying information is kept on file for future reference.

Contrary to the assertion in the Action, Nothing in the cited text discloses or suggests *installing or uninstalling protocol specific modules from a protocol-dependent device handler sublayer*, as recited in claim 18.

In the Examiner's remarks in paragraph 40 of the final Action, the Examiner appears to assert that the Dynamic Host Configuration Protocol (DHCP) service described in column 6, lines 31-35 corresponds to a *device-type specific protocol*, as recited in the claim. Applicants disagree, and assert that the Examiner's position is factually incorrect. Contrary to the Examiner's assertion, none of the services described in column 6, lines 31-36 correspond to a *device-type specific protocol*, as recited in the claim. Further, since the services are not *device-type specific protocols*, the services need not be installed or uninstalled or uninstalled.

In sum, Mann fails to disclose or suggest limitations recited in claim 18. It is therefore respectfully submitted that the Action fails to establish a *prima facie* case of obviousness, and that claim 18 is allowable and in condition for allowance.

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B.   *Claim 20*

Claim 20 stands rejected over Mann.   Applicants traverse this rejection, and assert

that the final Action fails to establish a *prima facie* case of obviousness.   Claim 20 includes a

limitation reciting "the integrated management agent further comprises a dynamic list of

device-type-specific protocols that it is capable of using, wherein each device-type-specific

protocol is associated with a list of objects and methods, and wherein a given list of objects

and methods is added to the dynamic list when a given module of the multiple modules

supporting a given device-type-specific protocol is installed to the protocol-dependent device

handler sublayer."

The Action asserts that Mann discloses this limitation, and cites column 6, lines 24-30

and column 10, line 67-column 11, line 26. Applicants disagree.

Col. 6, lines 24-30 reads as follows:

PoPs will generally comprise more services than are shown in FIG. 1 and may
include more than one node handling network management interface
capabilities. It is the task of the network management system of this invention
to manage all the services and interfaces housed at the numerous PoPs
comprising the comprehensive network.

Col. 10, line 67-column 11, line 26 reads as follows:

The control adapter 112 associated with the newly added node 106 or the
service adapter 108 associated with the newly added service 104 subscribes to
this discover event and upon receiving such, responds by publishing an
"identity" event. The identity event provides the NCC 114 with detailed
information about the service 104 or node 106. An example of information
contained within an identity event includes; a time stamp, the GUID of the
publisher, pertinent EAI system information, the PoP where the service or
node is located, server name, server IP address and memory size. The detailed
information found in the identity event can be stored in the database 120 of
NCC 114 for future reference. When the discover event includes status
performance data requests control adapter 112 or service adapter 108 will
respond with a "status" event. The status event provides the NCC 114 with a
report of the performance of the node 106 or service 104. An example of
information contained within a status event includes; a time stamp, GUID of
the publisher, performance data from the source, performance data from the

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sink, performance data from the protocol handler, and performance data from the facility. The detailed performance information contained within a status event can be stored in the database 120 of NCC 114 for future reference. The information supplied by the status event is used by the system administrator to access the overall performance and reliability of the various nodes and services throughout the data communications network.

Contrary to the assertion in the action, nothing in the text discloses or suggests *device-type-specific protocols*, much less an arrangement in which a device-type-specific protocol is associated with a list of objects and methods, and wherein a given list of objects and methods is added to the dynamic list when a given module of the multiple modules supporting a given device-type-specific protocol is installed to the protocol-dependent device handler sublayer., as recited in claim 20.

C.   *Claim 21*

Claim 21 stands rejected over the '120 patent. Applicants traverse this rejection, and assert that the final Action fails to establish a *prima facie* case of obviousness.

Claim 21 includes a limitation reciting that the "integrated management agent further comprises a consistent user interface module coupled to the object manager, wherein at least one device type-specific module is installed, and wherein the at least one device type-specific module further comprises a device handler for coupling a storage system to the integrated management agent."

The Action asserts that Mann discloses this limitation, and cites column 6, lines 24-30 and column 11, line 26. Applicants disagree.

Col. 6, lines 24-30 reads as follows:

PoPs will generally comprise more services than are shown in FIG. 1 and may include more than one node handling network management interface capabilities. It is the task of the network management system of this invention to manage all the services and interfaces housed at the numerous PoPs

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comprising the comprehensive network.

Col. 11, lines 14-22 reads as follows:

The status event provides the NCC 114 with a report of the performance of the
node 106 or service 104. An example of information contained within a status
event includes; a time stamp, GUID of the publisher, performance data from
the source, performance data from the sink, performance data from the
protocol handler, and performance data from the facility. The detailed
performance information contained within a status event can be stored in the
database 120 of NCC 114 for future reference.

Contrary to the assertion in the action, nothing in the text discloses or suggests an

integrated management agent which comprises a consistent user interface module coupled to

the object manager, wherein at least one *device type-specific module* is installed, and wherein

the at least one device type-specific module further comprises a device handler for coupling a

storage system to the integrated management agent., as recited in claim 21.

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CONCLUSIONS

Mann fails to disclose or suggest limitations of appellants' claims. Therefore, Mann cannot be used to establish the required *prima-facie* case of obviousness under 35 U.S.C. §103. Appellants urge the Board to reverse the examiner's rejections under 35 U.S.C. §103 of claims 18-35.

Respectfully submitted,

Jed W. Caven
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By:
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Registration No. 40,551
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Date: February 27, 2006

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APPENDIX A

Claims

18.   A system comprising:

an integrated management agent capable of managing components of a storage area network (SAN), the integrated management agent comprising a device agent;

the device agent comprising an object-based device handler sublayer and a protocol-dependent device handler sublayer, the protocol-dependent device handler sublayer comprising multiple modules, each respective module of the multiple modules adapted to support a respective device-type-specific protocol; and

wherein a particular module of the multiple modules that is adapted to support a particular device-type-specific protocol may be installed to or uninstalled from the protocol-dependent device handler sublayer independently of other modules of the multiple modules while the integrated management agent is running.

19.   The system of Claim 18, wherein the integrated management agent further comprises an object manager that represents the components of the SAN as objects, and wherein the object-based device handler sublayer provides an interface between the object manager and the protocol-dependent device handler sublayer to permit an object level interface to the devices.

20.   The system of Claim 18, wherein the integrated management agent further comprises a dynamic list of device-type-specific protocols that it is capable of using, wherein each device-type-specific protocol is associated with a list of objects and methods, and wherein a given list of objects and methods is added to the dynamic list when a given module of the multiple modules supporting a given device-type-specific protocol is installed to the protocol-dependent device

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handler sublayer.

21.   The system of Claim 19, wherein the integrated management agent further comprises a

consistent user interface module coupled to the object manager, wherein at least one device type-

specific module is installed, and wherein the at least one device type-specific module further

comprises a device handler for coupling a storage system to the integrated management agent.

22.   The system of claim 21, wherein at least one device type-specific module further

comprises code for supporting a plurality of protocols to communicate with a plurality of

devices.

23.   The system of claim 22, wherein the management system further comprises a distributed

error and status handler capable of handling error and status information from at least one device.

24.   The system of Claim 23, wherein at least a first level of the distributed error and status

handler executes on the at least one device.

25.   The system of Claim 24, wherein the at least one machine selected from the group

comprising a host and an appliance incorporates a second level of error and status handler.

26.   The system of Claim 24, wherein the distributed error and status handler further

comprises a centralized global error and status handler level.

27.   The system of Claim 25, wherein the centralized global error and status handler level

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executes upon a fault tolerant system in a storage are network management environment.

28.   The system of Claim 18, wherein the integrated management agent further comprises a
trap handler coupled to a notification module to receive traps from at least one SAN device and
send notification to at least one system administrator.

29.   The system of Claim 28, wherein the integrated management agent is further capable of
sending traps to support at least a second management system.

30.   The system of Claim 18, wherein the integrated management agent is capable of being
configured with a configuration utility.

31.   The system of Claim 18, wherein the object manager further comprises a dynamic list
indicating device types the integrated management agent is capable of handling, wherein
installing device type-specific modules causes addition of device types to the dynamic list, and
wherein addition of device types to the dynamic list does not require shutting down the
integrated management agent.

32.   The system of Claim 31, wherein the network interconnection system further comprises
at least one fibre channel switch, and wherein a device type-specific module is type specific to
the at least one fibre channel switch.

33.   The system of Claim 18, wherein the integrated management system further comprises a
firmware download module with unified user interface hiding device specific firmware download

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process and characteristics from the administrator.

34.   The system of Claim 18, wherein the integrated management agent is capable of discovering devices and agents in the SAN and their interconnection by applying a conglomerate method comprising at least two elements selected from the group comprising host and device agent broadcasting, multicasting device identity, collecting addresses from network traffic, collecting information from a name server, scanning a set of ranges of address supplied in configuration information, and collecting information about devices from configuration information.

35.   The system of Claim 18, wherein the integrated management agent is further capable of discovering devices and agents in the SAN and their interconnection by applying a conglomerate method comprising at least three elements selected from the group comprising host and device agent broadcasting, multicasting device identity, collecting addresses from network traffic, collecting information from a name server, scanning a set of ranges of address supplied in configuration information, and collecting information about devices from configuration information.

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